STAY IN TOUCH

Scan the Quick Response (QR) codes with a smart phone or visit the links below for more information about the Orion MPCV, future missions, and what you can do to be a part of the team!

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National Aeronautics and Space Administration

Glenn Research Center
21000 Brookpark Road
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ORION

MULTI-PURPOSE CREW VEHICLE

WHAT'S THE NEXT STEP IN SPACE EXPLORATION?

Check it out.

Deep space is the next big thing.

While it may seem like all of the really cool stuff happened decades ago, that's not true. It's hard to top the moon landing—we know. But what if we could bring back some of that same excitement and energy by taking the next step in space exploration? That's where NASA's Orion Multi-Purpose Crew Vehicle (MPCV) comes in.

The Orion MPCV shares quite a few characteristics with Apollo—the craft that got us to the moon and back. Newer technology, however, has led to some incredible advancements that will allow us to go deeper into space than ever before.

So, what's the big deal?

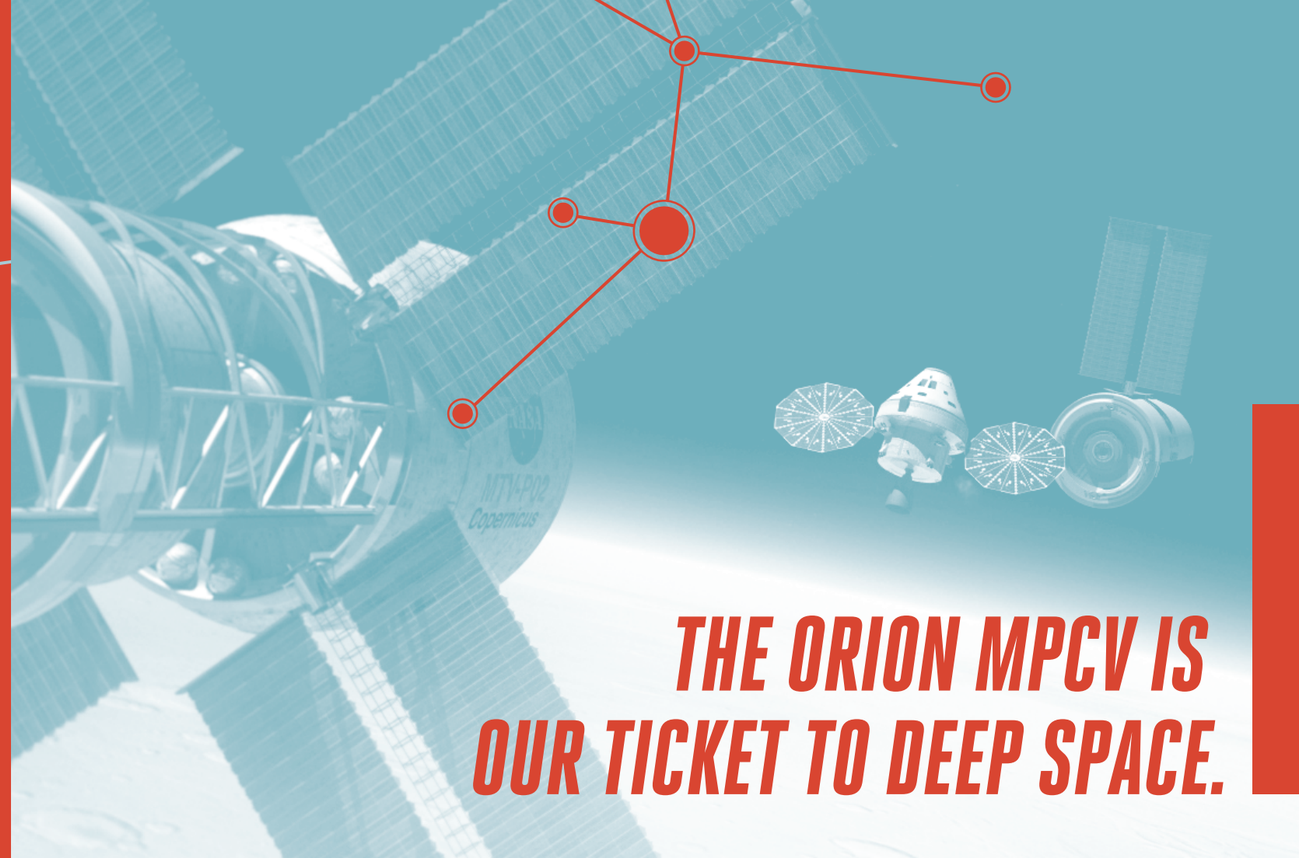
First off, the Orion MPCV could get us to the moon at incredible speed—getting us there in about three days. When you're talking about traveling 240,000 miles, we'd say that's pretty darn fast!

But that's only the beginning. The Orion MPCV is going to take us to places further than we've ever been, including asteroids and even Mars! Missions to the red planet may not be that far off. That means you could be on the crew that turns science fiction into reality. Pretty cool, huh?

With that being said, don't you think it's time we connected?

We could be your ticket to traveling the solar system! Things at NASA are more exciting than ever and we want you to be a part of them. Students like you are the future astronauts, engineers, and scientists of NASA. Just think—you could be involved in helping us shape the future! We simply cannot do any of these amazing things without you.

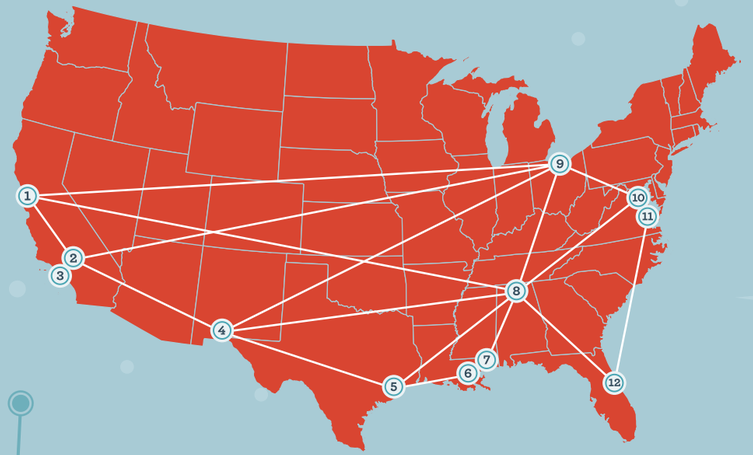
Read on to learn about what makes the Orion MPCV tick and the long-term goals and missions of NASA (a.k.a., the stuff you could totally be a part of).



THE ORION MPCV IS OUR TICKET TO DEEP SPACE.

ACROSS THE NATION...

WE'RE LAYING THE FOUNDATION!



1. AMES RESEARCH CENTER
2. DRYDEN FLIGHT RESEARCH CENTER
3. JET PROPULSION LABORATORY
4. WHITE SANDS TEST FACILITY
5. JOHNSON SPACE CENTER
6. MICHOUD ASSEMBLY FACILITY
7. STENNIS SPACE CENTER
8. MARSHALL SPACE FLIGHT CENTER
9. GLENN RESEARCH CENTER
10. LANGLEY RESEARCH CENTER
11. GODDARD SPACE FLIGHT CENTER
12. KENNEDY SPACE CENTER

THAT'S RIGHT—A NEW FOUNDATION WITH A NEW DIRECTION.

NASA is already hard at work preparing the Orion MPCV for spaceflight. The process takes a lot of manpower, brainpower, and a whole bunch of fancy facilities connected all over the country.

THE ORION MPCV'S MAIN MODULES

LAUNCH ABORT SYSTEM

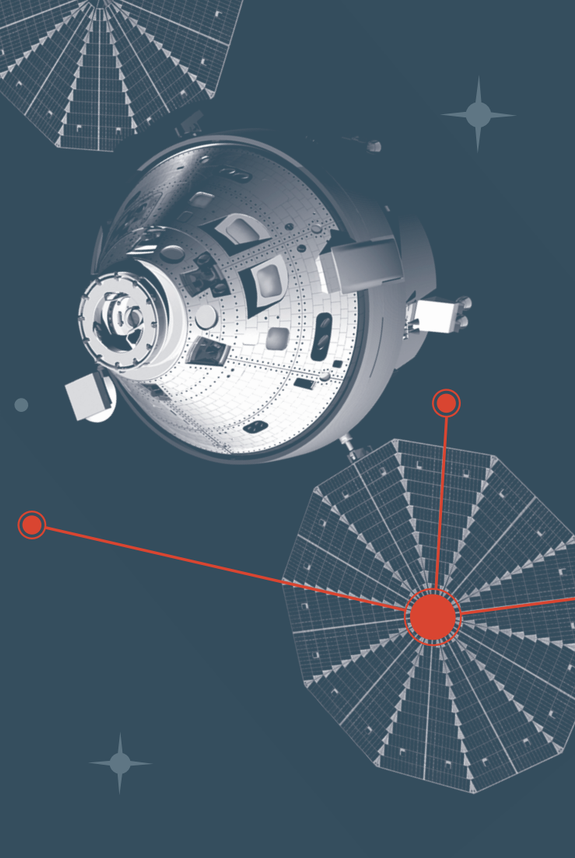
Safety has always been NASA's first priority. The Orion MPCV will provide the safest space travel yet. Orion MPCV's Launch Abort System (LAS) will get the craft and its crew to safety if there's an emergency on the launch pad or at any time during launch.

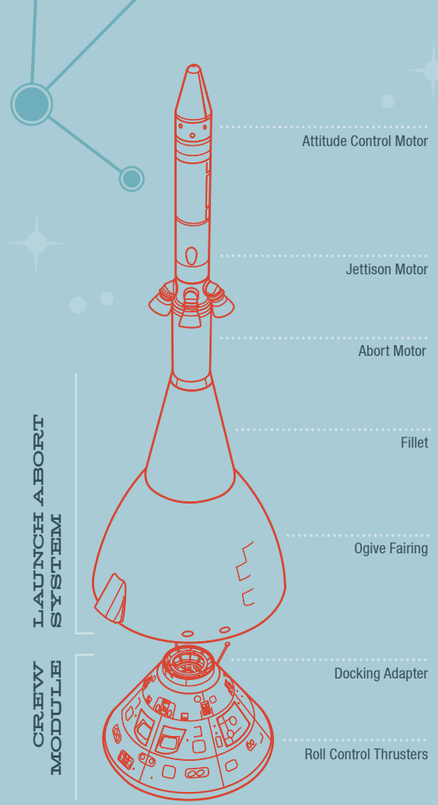
CREW MODULE

The Crew Module (CM) borrows a lot from Apollo's basic design but it uses way better technology, including faster processors, improved hardware and software efficiency, and new waste management systems. In addition, much of the CM is reusable and can be salvaged for future missions. This would be your home on your long voyage to deep space, so we've tried to make it as cozy as possible.

SERVICE MODULE

The Service Module (SM) will act as the main power and propulsion component of the spacecraft. It has mountable solar panels to provide in-flight power. These innovative solar arrays are ultra-thin and highly efficient. The SM is also equipped with a new power transfer system that allows energy harnessed by the arrays to be safely stored and controlled.





PRACTICE MAKES PERFECT

Would you want to get in a ship that wasn't tested out first? Yeah, we didn't think so.

PA-1 PAD ABORT TEST

The Orion Pad Abort (PA–1) Test, which took place May 6, 2010, at White Sands Missile Range in New Mexico, was the first in a series of tests for the Launch Abort System. This test was used to find out how the system would work if it was fired from the launch pad.

The goal of all of these tests is to ensure that when you become an astronaut (hint, hint) and are being launched into space, the abort system is functioning properly. Real-world conditions and scenarios will be used to make all testing as true to the actual flight as possible.

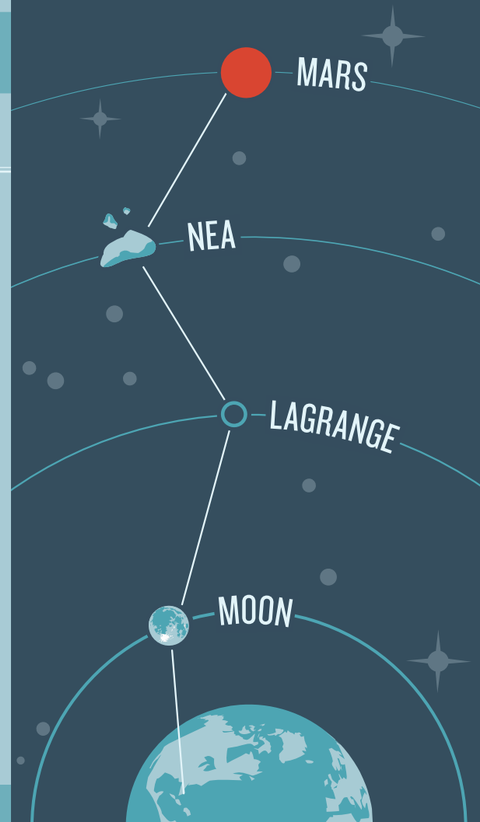
FUTURE TESTING

The success of the Orion MPCV program demands lots of testing to make sure the spacecraft's design is the best it can possibly be. Future testing will help assure critical systems, such as the spacecraft's re-entry and separation events, are functioning correctly. Many of these systems are difficult to verify on the ground, so testing will be done in realistic scenarios for optimal results.

All of the tests conducted will help reduce the overall risk for the first human space flight of the Orion MPCV. Safety first, people!

HAVE WHAT IT TAKES TO BECOME A NASA ENGINEER?

You have been assigned the task of determining the thrust required for Orion MPCV's LAS abort motor to work properly and keep the crew safe. Scan the QR code or visit http://spaceflightsystems.grc.nasa.gov/Orion/documents/Launch_Abort_System_Problem.pdf to help us find the solution and show us your skills!



ALL SYSTEMS GO! THE DESTINATIONS OF TOMORROW

MARS

Ah, the mother of all missions! Getting to Mars provides us the best opportunity for demonstrating that humans can live for extended stays beyond low-Earth orbit. The mission's requirements will drive innovation and encourage creative ways to address challenges that would have long-lasting benefits and applications. The challenge of landing the Orion MPCV on Mars would encourage nations around the world to work together to achieve such an ambitious goal. Awesome!

NEAR EARTH ASTEROID (NEA)

Before we take the next giant leap for mankind, we can utilize missions to asteroids to address questions about the solar system's formation and our place in it. An NEA mission could also provide valuable insight into reducing the threat of an asteroid impact with Earth.

LAGRANGE POINTS

Lagrange points are areas of microgravity beyond our orbit where the pull of the Earth and moon is equal, allowing a spacecraft to float in space. These points could have many uses such as construction, fueling, and repair of complex in-space systems.

THE MOON

The moon—the accomplishment that established America's supremacy in space—still holds many secrets about the Earth and our solar system. Having humans live and work on the moon will allow NASA to test new capabilities and study the long-term effects of life in space.